UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,969	08/18/2006	Haruyasu Yamaguchi	20555/0207384-US0	2360

7278 7590 01/28/2009

DARBY & DARBY P.C.
P.O. BOX 770
Church Street Station
New York, NY 10008-0770

EXAMINER	
KOLKER, DANIEL E	
ART UNIT	PAPER NUMBER
1649	
MAIL DATE	DELIVERY MODE
01/28/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/589,969	YAMAGUCHI ET AL.	
	Examiner	Art Unit	
	DANIEL KOLKER	1649	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☒ Claim(s) *17-20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/20/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 – 20 are pending in the present office action.

Claim Objections

2. Claims 17 – 20 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim. Each of claims 17 – 20 depends in part from claims 6 and 7, which themselves are multiple dependent claims. See MPEP § 608.01(n). Accordingly, the claims 17 – 20 have not been further treated on the merits.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 – 5 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Independent claim 1, as well as claims 2 – 5 which depend therefrom, is directed to "A monoclonal antibody". There is no requirement that the antibody be isolated. The claims subject to this rejection read on products of nature, as they do not require the hand of man and can be produced by the immune system residing within a living organism. Note that claims 6 – 7 are drawn to antibodies which are chimeric or humanized and therefore require the hand of man.

Amendment of claim 1 to recite "An isolated monoclonal antibody" would be sufficient to overcome this rejection.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4 – 5 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 – 5 and 16 are confusing because they use many terms which do not have a common definition in the art and therefore are confusing. The term “a substance of the N-terminus peptide of the amyloid β and a biological high molecular compound” is a confusing term. What is “a substance of the N-terminus peptide”? Is it the peptide itself? Is it something bound to the peptide? Is it an antibody that binds to the peptide? Additionally, what does it mean when this "substance" is used with the word "and" followed by "a biological high molecular compound"? Does the "and" mean that the two products are co-administered? That they are conjugated? The terms are so unclear that a skilled artisan could not determine what is encompassed by the claim. Similarly claim 5 recites “a bound substance of a peptide… and a biological high molecular compound”, and claim 4 recites “a bound substance of the N-terminus… and a biological high molecular compound”.

Additionally, claim 16 is confusing for other reasons. The steps recited in the claim (administering several compounds followed by collecting antibodies from an animal) would lead to production of polyclonal antibodies, but the claim is drawn to a method for preparing a monoclonal antibody. It is unclear whether additional steps, such as fusion with myeloma cells as described at paragraph [0050] of the specification, are necessary in order to practice the method, since the method recites all necessary steps but does not lead to production of monoclonal antibodies. Finally, claims 4 – 5 and 16 all use the term "comparatively shorter". The term "comparatively shorter" in claims 4 – 5 and 16 is a relative term which renders the claim indefinite. The term "comparatively shorter" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. A skilled artisan would not be able to determine how much shorter is “comparatively shorter”.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 8 and 10 – 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Chain (U.S. Patent Application Publication 2003/0073655).

Chain teaches antibodies which bind specifically to the N-terminus of Aβ protein and do not recognize a so-called spanning protein, which includes the residues of APP which precede the N-terminus of Aβ. See for example abstract, as well as paragraphs [0009], [0064], [0067], and [0103] – [0107]. Chain teaches reduction to practice of two specific monoclonal antibodies that are free-end specific (i.e., they bind to the N-terminus of Aβ protein but not to APP, from which Aβ protein is cleaved), named 4D12 and 2A10; see paragraph [0107]. Thus the reference teaches every element of claim 1. Claims 2 – 3 are anticipated as Chain explicitly teaches antibodies that bind specifically to DAEFR (paragraphs [0104] – [0105], note the use of the three-letter abbreviation Asp-Ala-Glue-Phe-Arg, which is the same as DAEFR). Claims 4 – 5 are anticipated as they are product-by-process claims that describe a process by which the antibodies could be obtained but do not structurally define the antibodies any further than claim 1; see MPEP § 2113. Claims 6 – 7 are included in this rejection as Chain teaches that the invention includes antibodies that are end-specific for the N-terminus (paragraph [0009] for example) and specifically defines the term "antibody" to include both chimeric and humanized antibodies (paragraphs [0033] and [0035] – [0036]). Claim 8 is anticipated as Chain provides an explicit example of an experiment wherein antibodies that are end-specific for the N-terminus of Aβ protein as well as those which bind to Aβ1-40 are present. See paragraph [0104], wherein most of the antibodies bind to Aβ1-40, but some specifically recognize residues 1-5 only. A “kit” as recited in claim 8 is not specifically defined, but the prior art reference teaches all elements required for the claimed “kit” in that it teaches both antibodies. Claim 10 is anticipated as the sequence recited in this claim is the C-terminal end of Aβ1-40; see Chain paragraph [0074] which discloses the sequence of Aβ1-42, note that residues 35-40 are MVGGVV. Claim 11 is anticipated as it recites an intended use of the claimed product, which is not given patentable weight. Since the prior art teaches the product of claim 11, that claim is anticipated.

6. Claims 1 – 5 and 8 – 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Mathews 2002. Journal of Biological Chemistry 277:36415-36424, cited as reference AO on IDS filed 20 November 2005).

Mathews teaches monoclonal antibodies JRF/AβN/25 and JRF/rAβ1-15/2, which bind to the N-terminus of Aβ protein but not to APP. See p. 36416, Table 1, Figure 1, and final

paragraph for descriptions of these antibodies and evidence that they do not bind APP. Claims 2 – 3 are anticipated as antibody JRF/AβN/25 was raised against the first 25 amino acids of Aβ, so it will necessarily recognize the first 16 amino acids (recited in claim 2) and the first five amino acids (recited in claim 3). Claims 4 – 5 are anticipated as they are product-by-process claims that describe a process by which the antibodies could be obtained but do not structurally define the antibodies any further than claim 1; see MPEP § 2113. Claims 8 – 9 are anticipated as Mathews teaches an ELSIA assay wherein the plates were coated with either JRF/cAβ40/10 (which is a C-terminus-specific antibody that recognizes Aβ40) or JRF/cAβ42/26 (which is a C-terminus-specific antibody that recognizes Aβ42), followed by addition of samples, and detection with the N-terminal specific antibody JRF/rAβ1-15/2. Since the ELISA contains both antibodies, it is reasonably a "kit" as recited in claim 8. Claims 9 – 10 are anticipated as the C-terminal sequence recognized by JRF/cAβ40/10 is MVGGVV as this sequence is residues 35-40 of Aβ. Claim 12 is anticipated as the C-terminal sequence recognized by JRF/cAβ42/26 is GGVIA, as this sequence is residues 38 – 42 of Aβ. Claims 11 and 13 are anticipated as they recite intended use of the products disclosed by Mathews but require no additional elements beyond those taught by the reference. While the intended use need not be given patentable weight, Mathews in fact does teach use of these products (kits) for assaying amyloid β 1 – 40 and 1 – 42. Claim 14 is anticipated as Mathews teaches an ELISA comprising causing both antibodies to react with Aβ; note no specific steps are recited beyond "causing… to react with an amyloid β in a sample". Mathews teaches these steps at p. 36417 first paragraph. Claim 15 is anticipated as the antibodies taught by Mathews recognize the C-terminus of Aβ.

7. Claims 1 – 5 and 8 – 15 are rejected under 35 U.S.C. 102(a) as being anticipated by Horikoshi 2004 (Biochemical and Biophysical Research Communications 319:733-737, published online 21 May 2004).

Horikoshi teaches monoclonal antibody 82E1, which is specific for the N-terminus of Aβ and does not react with intact APP; see Table 1. The antibody was raised against residues 1 – 16 of Aβ (see paragraph spanning pp. 733-734) so it will necessarily recognize those residues, recited in claim 2, as well as the first five residues, recited in claim 3. Claims 4 – 5 are anticipated as they are product-by-process claims that describe a process by which the antibodies could be obtained but do not structurally define the antibodies any further than claim

1; see MPEP § 2113. Claims 8 – 9 are anticipated as Horikoshi teaches ELISA assays wherein plates were coated with either an antibody that is specific for the C-terminus of Aβ40 or Aβ42, samples are added, and detected with antibody 82E1, which recognizes the N-terminus. Since the ELISA contains both antibodies, it is reasonably a "kit" as recited in claim 8. Claim 10 is anticipated as the C-terminal sequence recognized by 1A10 is MVGGVV as this sequence is residues 35-40 of Aβ. Claim 12 is anticipated as the C-terminal sequence recognized by 1C3 antibody is GGVIA, as this sequence is residues 38 – 42 of Aβ. Claims 11 and 13 are anticipated as they recite intended use of the products disclosed by Horikoshi but do not require any additional elements beyond those taught by the reference. While the intended use need not be given patentable weight, Horikoshi in fact does teach use of these products (kits) for assaying amyloid β 1 – 40 and 1 – 42. Claim 14 is anticipated as Horikoshi teaches an ELISA comprising causing both antibodies to react with Aβ; note no specific steps are recited beyond "causing… to react with an amyloid β in a sample". Mathews teaches these steps at p. 734 second column first complete paragraph. Claim 15 is anticipated as the antibodies taught by Horikoshi recognize the C-terminus of Aβ.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Conclusion

8. No claim is allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL KOLKER whose telephone number is (571)272-3181. The examiner can normally be reached on Mon - Fri 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Stucker can be reached on (571) 272-0911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel E. Kolker/
Primary Examiner, Art Unit 1649
January 22, 2009